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RAW SEQUENCE LISTING   DATE: 12/31/2002
PATENT APPLICATION: **US/09/819,401A**   TIME: 14:03:58

Input Set : **D:\39727-20007.txt**
Output Set: **N:\CRF4\12312002\I819401A.raw**

```
 4 <110> APPLICANT: Humeau, Laurent
 5        Li, Yuexia
 6        Merling, Randal
 7        Dropulic, Boro
 8        Sconely, Kathy L.
11 <120> TITLE OF INVENTION: CONDITIONALLY REPLICATING VECTORS
12        FOR INHIBITING VIRAL INFECTIONS
15 <130> FILE REFERENCE: 39727-20007.00
17 <140> CURRENT APPLICATION NUMBER: US 09/819,401A
18 <141> CURRENT FILING DATE: 2001-03-27
20 <160> NUMBER OF SEQ ID NOS: 18
22 <170> SOFTWARE: FastSEQ for Windows Version 4.0
24 <210> SEQ ID NO: 1
25 <211> LENGTH: 39
26 <212> TYPE: DNA
27 <213> ORGANISM: Artificial Sequence
29 <220> FEATURE:
30 <223> OTHER INFORMATION: Oligonucleotide encoded wild-type HIV US sequence
32 <400> SEQUENCE: 1
33 gtgtgcccgt ctgttgtgtg actctggtaa ctagagatc                          39
35 <210> SEQ ID NO: 2
36 <211> LENGTH: 39
37 <212> TYPE: DNA
38 <213> ORGANISM: Artificial Sequence
40 <220> FEATURE:
41 <223> OTHER INFORMATION: Vector sequence
43 <400> SEQUENCE: 2
44 gtgtgcccac ctgttgtgtg actctggcag ctagagaac                          39
46 <210> SEQ ID NO: 3
47 <211> LENGTH: 40
48 <212> TYPE: DNA
49 <213> ORGANISM: Artificial Sequence
51 <220> FEATURE:
52 <223> OTHER INFORMATION: Sequence encoded ribozyme
54 <400> SEQUENCE: 3
55 cacacaacac tgatgaggcc gaaaggccga aacgggcaca                         40
57 <210> SEQ ID NO: 4
58 <211> LENGTH: 40
59 <212> TYPE: DNA
60 <213> ORGANISM: Artificial Sequence
62 <220> FEATURE:
63 <223> OTHER INFORMATION: Sequence encoded ribozyme
65 <400> SEQUENCE: 4
```

RAW SEQUENCE LISTING   DATE: 12/31/2002
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```
    66 atctctagtc tgatgaggcc gaaaggccga aaccagagtc                    40
    68 <210> SEQ ID NO: 5
    69 <211> LENGTH: 39
    70 <212> TYPE: DNA
    71 <213> ORGANISM: Artificial Sequence
    73 <220> FEATURE:
    74 <223> OTHER INFORMATION: Vector sequence
    76 <400> SEQUENCE: 5
    77 gtgtgcccgc ctgttgtgtg actctggtaa ctagagatc                     39
    79 <210> SEQ ID NO: 6
    80 <211> LENGTH: 39
    81 <212> TYPE: DNA
    82 <213> ORGANISM: Artificial Sequence
    84 <220> FEATURE:
    85 <223> OTHER INFORMATION: Vector sequence
    87 <400> SEQUENCE: 6
    88 gtgtgcccgt ctgttgtgtg actctggcaa ctagagatc                     39
    90 <210> SEQ ID NO: 7
    91 <211> LENGTH: 15
    92 <212> TYPE: DNA
    93 <213> ORGANISM: Artificial Sequence
    95 <220> FEATURE:
    96 <223> OTHER INFORMATION: Consensus splice donor
```
W--> **98 <221> NAME/KEY: misc_feature**
```
    99 <222> LOCATION: (1)...(15)
   100 <223> OTHER INFORMATION: n = A,T,C or G
```
W--> **102 <400> 7**
W--> **103 nnnnaggtaa gtnnn**   15
```
   105 <210> SEQ ID NO: 8
   106 <211> LENGTH: 15
   107 <212> TYPE: DNA
   108 <213> ORGANISM: Artificial Sequence
   110 <220> FEATURE:
   111 <223> OTHER INFORMATION: Beta-globin splice donor
```
W--> **113 <221> NAME/KEY: misc_feature**
```
   114 <222> LOCATION: (1)...(15)
   115 <223> OTHER INFORMATION: n = A,T,C or G
```
W--> **117 <400> 8**
W--> **118 ngggcaggta agtat**   15
```
   120 <210> SEQ ID NO: 9
   121 <211> LENGTH: 15
   122 <212> TYPE: DNA
   123 <213> ORGANISM: Artificial Sequence
   125 <220> FEATURE:
   126 <223> OTHER INFORMATION: HIV major splice donor
```
W--> **128 <221> NAME/KEY: misc_feature**
```
   129 <222> LOCATION: (1)...(15)
   130 <223> OTHER INFORMATION: n = A,T,C or G
```
W--> **132 <400> 9**

RAW SEQUENCE LISTING   DATE: 12/31/2002
PATENT APPLICATION: **US/09/819,401A**   TIME: 14:03:58

Input Set : **D:\39727-20007.txt**
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```
W--> 133 nngactggtg agtan                                          15
     135 <210> SEQ ID NO: 10
     136 <211> LENGTH: 15
     137 <212> TYPE: DNA
     138 <213> ORGANISM: Artificial Sequence
     140 <220> FEATURE:
     141 <223> OTHER INFORMATION: HIV-1 env splice donor
     143 <400> SEQUENCE: 10
     144 aaagcagtaa gtagt                                           15
     146 <210> SEQ ID NO: 11
     147 <211> LENGTH: 15
     148 <212> TYPE: DNA
     149 <213> ORGANISM: Artificial Sequence
     151 <220> FEATURE:
     152 <223> OTHER INFORMATION: HIV-2 env splice donor
     154 <400> SEQUENCE: 11
     155 agacaagtga gtaag                                           15
     157 <210> SEQ ID NO: 12
     158 <211> LENGTH: 15
     159 <212> TYPE: DNA
     160 <213> ORGANISM: Artificial Sequence
     162 <220> FEATURE:
     163 <223> OTHER INFORMATION: HIV-2 major splice donor
W--> 165 <221> NAME/KEY: misc_feature
     166 <222> LOCATION: (1)...(15)
     167 <223> OTHER INFORMATION: n = A,T,C or G
W--> 169 <400> 12
W--> 170 nngaaggtaa gtgcn                                          15
     172 <210> SEQ ID NO: 13
     173 <211> LENGTH: 112
     174 <212> TYPE: DNA
     175 <213> ORGANISM: Artificial Sequence
     177 <220> FEATURE:
     178 <223> OTHER INFORMATION: Double-stranded oligonucleotide
     180 <400> SEQUENCE: 13
     181 aagcttgcct tgagtgctca aagtagtgtg tgcccacctg ttgtgtgact ctggcagcta   60
     182 gagatcccac agaccctttt agtcagtgtg gaaaatctct agcagtggcg cc           112
     184 <210> SEQ ID NO: 14
     185 <211> LENGTH: 39
     186 <212> TYPE: DNA
     187 <213> ORGANISM: Artificial Sequence
     189 <220> FEATURE:
     190 <223> OTHER INFORMATION: Oligonucleotide with mutant nucleotides
W--> 192 <221> NAME/KEY: misc_feature
     193 <222> LOCATION: (1)...(39)
     194 <223> OTHER INFORMATION: n = A,T,C or G
W--> 196 <400> 14
W--> 197 gtgtgcccnn ctgttgtgtg actctggnan ctagaganc                 39
     199 <210> SEQ ID NO: 15
```

RAW SEQUENCE LISTING   DATE: 12/31/2002
PATENT APPLICATION: **US/09/819,401A**   TIME: 14:03:58

Input Set : **D:\39727-20007.txt**
Output Set: **N:\CRF4\12312002\I819401A.raw**

```
200 <211> LENGTH: 39
201 <212> TYPE: DNA
202 <213> ORGANISM: Artificial Sequence
204 <220> FEATURE:
205 <223> OTHER INFORMATION: Mutated oligonucleotide
207 <400> SEQUENCE: 15
208 gtgtgcccat ctgttgtgtg actctggtaa ctagagatc                      39
210 <210> SEQ ID NO: 16
211 <211> LENGTH: 39
212 <212> TYPE: DNA
213 <213> ORGANISM: Artificial Sequence
215 <220> FEATURE:
216 <223> OTHER INFORMATION: Mutated oligonucleotide
218 <400> SEQUENCE: 16
219 gtgtgcccgt ctgttgtgtg actctggtag ctagagatc                      39
221 <210> SEQ ID NO: 17
222 <211> LENGTH: 16
223 <212> TYPE: DNA
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Analog splice donor
```
W--> 229 **<221> NAME/KEY: misc_feature**
```
230 <222> LOCATION: (1)...(16)
231 <223> OTHER INFORMATION: n = A,T,C or G
```
W--> 233 **<400> 17**
W--> 234 **cttcagggtg agttnn   16**
```
236 <210> SEQ ID NO: 18
237 <211> LENGTH: 1185
238 <212> TYPE: PRT
239 <213> ORGANISM: Artificial Sequence
241 <220> FEATURE:
242 <223> OTHER INFORMATION: Amino acid sequence of a chimeric HIV CTL epitope
244 <400> SEQUENCE: 18
245 Met Lys Ile Arg Leu Arg Pro Gly Gly Asn Lys Lys Tyr Lys Leu Lys
246 1               5                   10                  15
247 His Ile Val Trp Ala Ser Arg Glu Leu Glu Arg Phe Gly Ser Glu Glu
248             20                  25                  30
249 Leu Arg Ser Leu Tyr Asn Thr Val Ala Val Leu Tyr Cys Val His Gln
250         35                  40                  45
251 Lys Ile Glu Val Lys Asp Thr Lys Glu Ala Leu Asp Thr Glu Asn Arg
252     50                  55                  60
253 Asn Gln Glu Ser Gln Asn Tyr Pro Ile Val Gln Asn Leu Gly Gln Met
254 65                  70                  75                  80
255 Val His Gln Ala Leu Ser Pro Arg Thr Leu Asn Ala Trp Val Lys Val
256                 85                  90                  95
257 Ile Glu Glu Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe Ser Ala
258             100                 105                 110
259 Leu Ser Glu Gly Ala Thr Pro Gln Asp Leu Asn Thr Met Leu Asn Thr
260         115                 120                 125
```

```
261 Val Gly Gly His Gln Ala Ala Met Gln Met Leu Lys Ala Thr Ile Asn
262     130             135             140
263 Glu Glu Ala Ala Glu Trp Asp Arg Leu His Pro Val His Ala Gly Pro
264 145             150             155             160
265 Ile Ala Pro Gly Gln Met Arg Glu Pro Arg Gly Thr Ser Thr Leu Gln
266             165             170             175
267 Glu Gln Ile Ala Trp Met Thr Asn Asn Pro Pro Ile Pro Val Gly Glu
268             180             185             190
269 Ile Tyr Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys Ile Val Arg Met
270         195             200             205
271 Tyr Ser Pro Val Ser Ile Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys
272     210             215             220
273 Thr Leu Arg Ala Glu Gln Ala Thr Gln Glu Val Lys Asn Trp Met Thr
274 225             230             235             240
275 Glu Thr Leu Leu Val Gln Asn Ala Asn Pro Asp Cys Lys Thr Ile Leu
276             245             250             255
277 Lys Ala Leu Leu Glu Asp Met Met Thr Ala Cys Gln Gly Val Gly Gly
278             260             265             270
279 Pro Gly His Lys Ala Arg Leu Val Gln Glu Gly His Gln Met Lys Asp
280         275             280             285
281 Cys Thr Glu Arg Gln Ala Asn Phe Gly Asn Phe Pro Gln Ser Arg Leu
282         290             295             300
283 Glu Pro Thr Ala Pro Pro Glu Ile Thr Leu Trp Gln Arg Pro Leu Val
284 305             310             315             320
285 Asp Thr Val Leu Glu Asp Met Asn Leu Val Leu Val Gly Pro Thr Pro
286             325             330             335
287 Val Asn Ile Ser Pro Ile Glu Thr Val Pro Val Lys Leu Gly Pro Lys
288             340             345             350
289 Val Lys Gln Trp Pro Leu Ala Leu Val Glu Ile Cys Thr Glu Met Glu
290         355             360             365
291 Lys Glu Gly Lys Ile Ser Lys Ile Gly Pro Thr Val Leu Asp Val Gly
292     370             375             380
293 Asp Ala Tyr Phe Ser Val Pro Leu Asp Glu Asp Phe Arg Lys Tyr Thr
294 385             390             395             400
295 Ala Phe Thr Ile Pro Ser Ile Trp Lys Gly Ser Pro Ala Ile Phe Gln
296             405             410             415
297 Ser Ser Met Thr Lys Asn Pro Asp Ile Val Ile Tyr Gln Tyr Met Asp
298             420             425             430
299 Asp Leu Tyr Val Asp Leu Glu Glu Gly Gln His Arg Thr Lys Ile Glu
300         435             440             445
301 Glu Leu Arg Gln His Leu Leu Arg Trp Gly Phe Thr Thr Pro Asp Lys
302     450             455             460
303 Lys Pro Ile Lys Leu Pro Glu Lys Glu Ser Trp Leu Val Gly Lys Leu
304 465             470             475             480
305 Asn Trp Ala Ser Gln Ile Tyr Ala Gly Ile Lys Val Lys Gln Leu Ile
306             485             490             495
307 Pro Ile Thr Glu Glu Ala Glu Leu Glu Ile Leu Lys Glu Pro Val His
308             500             505             510
309 Gly Val Tyr Gln Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys Thr Gly
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 12/31/2002
PATENT APPLICATION: US/09/819,401A   TIME: 14:03:59

Input Set : D:\39727-20007.txt
Output Set: N:\CRF4\12312002\I819401A.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 1,2,3,4,13,14,15
Seq#:8; N Pos. 1
Seq#:9; N Pos. 1,2,15
Seq#:12; N Pos. 1,2,15
Seq#:14; N Pos. 9,10,28,30,38
Seq#:17; N Pos. 15,16

VERIFICATION SUMMARY   DATE: 12/31/2002
PATENT APPLICATION: **US/09/819,401A**   TIME: 14:03:59

Input Set : **D:\39727-20007.txt**
Output Set: **N:\CRF4\12312002\I819401A.raw**

L:98 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:102 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:7
L:103 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:113 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:117 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:8
L:118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:128 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:132 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:9
L:133 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:165 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:169 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:12
L:170 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:192 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:196 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:14
L:197 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
L:229 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:233 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:17
L:234 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:0